GSM/GPRS/GPS Tracker **GV55LITE**

# User Manual

TRACGV55LITEUM001

**Revision: 1.02**




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## Revision History

| Revision | Date | Author | Description of change |
|---|---|---|---|
| 1.01 | 2012-7-31 | Owen Feng | Initial |
| 1.02 | 2012-11-08 | Owen Feng | Change some pictures |
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# 1. Introduction

The GV55LITE is a powerful GPS locator designed for vehicle or asset tracking. It has superior receiver sensitivity, fast TTFF (Time to First Fix) and supports Dual-Band GSM frequencies 850/900/1800/1900, its location can be monitored in real time or be periodically tracked by a backend server or other specified terminals. The GV55LITE has multiple input/output interfaces that can be used for monitoring or controlling external devices. Based on the integrated @Track protocol, the GV55LITE can communicate with a backend server through the GPRS/GSM network to transfer reports of Emergency, geo-fence boundary crossings, low backup battery or scheduled GPS position as well as many other useful functions. Users can also use GV55LITE to monitor the status of a vehicle and control the vehicle by its external relay output. System Integrators can easily setup their tracking systems based on the full-featured @Track protocol.

## 1.1. Reference

**Table 1. GV55LITE Protocol Reference**

| SN | Document name | Remark |
|---|---|---|
| [1] | GV55LITE @Track Air Interface Protocol | The air protocol interface between GV55LITE and backend server. |

## 1.2. Terms and Abbreviations

**Table 2. Terms and Abbreviations**

| Abbreviation | Description |
|---|---|
| AGND | Analog Ground |
| AIN | Analog Input |
| DIN | Digital Input |
| DOUT | Digital Output |
| GND | Ground |
| MIC | Microphone |
| RXD | Receive Data |
| TXD | Transmit Data |
| SPKN | Speaker Negative |
| SPKP | Speaker Positive |

# 2. Product Overview

## 2.1. Check Part List

Before starting, check all the following items have been included with your GV55LITE. If anything is missing, please contact your supplier.




**Figure 1. Appearance of GV55LITE**

## 2.2. **Parts List**

**Table 3. Part List**

| Name | Picture |
|---|---|
| GV55LITE Locator | 63mm*50mm*13.2mm |
| User Cable |  |
| DATA_CABLE_M (Optional) |  |

## 2.3. **Interface Definition**

The GV55LITE has a 6 PIN interface connector. It contains the connections for power, I/O. The sequence and definition of the 6PIN connector are shown in following figure:

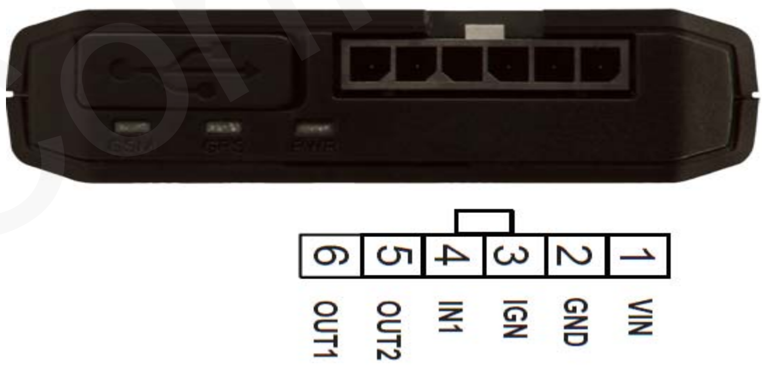



**Figure 2. The 6 PIN connector on the GV55LITE**

**Table 4. Description of 6 PIN Connections**

| Index | Description | Comment |
|---|---|---|
| 1 | VIN | External DC power input, 8-32V |
| 2 | GND | GND |
| 3 | IGN | Ignition input, positive trigger |
| 4 | IN1 | Digital input, negative trigger |
| 5 | OUT2 | Open drain, 150mA max |
| 6 | OUT1 | Open drain, 150mA max ,with latch circuit |

## 2.4. GV55LITE User Cable Colour

**Table 5. GV55LITE User Cable Colour definition**

| Definition | Color | PIN No. | Cable |
|---|---|---|---|
| VIN | Red | 1 |  |
| GND | Black | 2 | |
| IGN | White | 3 | |
| IN1 | Orange | 4 | |
| OUT2 | Green | 5 | |
| OUT1 | Blue | 6 | |

# 3 . Getting Started

## 3.1. Opening the Case



**Figure 3. Opening the Case**

Insert the triangular-pry-opener into the gap of the case as shown below, push the opener up until the case unsnapped.

## 3.2. Closing the Case



**Figure 4. Closing the Case**

Place the cover on the bottom in the position as shown in the following figure. Slide the cover against the direction of the arrow until it snapped.

## 3.3. Installing a SIM Card

Open the case and ensure the unit is not powered (unplug the 6Pin cable). Slide the holder right to open the SIM card. Insert the SIM card into the holder as shown below with the gold-colored contact area facing down taking care to align the cut mark. Close the SIM card holder. Close the case.



**Figure 5. SIM Card Installation**

## 3.4. Power Connection

PWR (PIN1) / GND (PIN2) are the power input pins. The input voltage range for this device is from 8V to 32V. The device is designed to be installed in vehicles that operate on 12V or 24V systems without the need for external transformers.

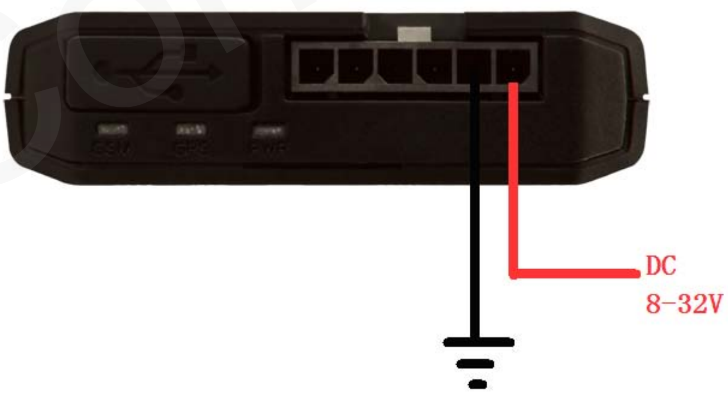



**Figure 6. Typical Power Connection**

## 3.5. **Ignition Detection**

**Table 6. Electrical Characteristics of Ignition Detection**

| Logical State | Electrical State |
| --- | --- |
| Active | 5.0V to 32V |
| Inactive | 0V to 3V or Open |




**Figure 7. Typical Ignition Detection**

IGN (Pin3) is used for ignition detection. It is strongly recommended to connect this pin to ignition key "RUN" position as shown up.

An alternative to connecting to the ignition switch is to find a non permanent power source that is only available when the vehicle is running. For example the power source for the FM radio.

IGN signal can be configured to start transmitting information to backend server when ignition is on; and enter power saving mode when ignition is off.

## 3.6. **Digital Inputs**

There are one general purpose digital inputs on GV55LITE. It is negative trigger.

**Table 7. Electrical Characteristics of the digital inputs**

| Logical State | Electrical Characteristics |
| --- | --- |
| Active | 0V to 0.8V |
| Inactive | Open |

The following diagram shows the recommended connection of a digital input.

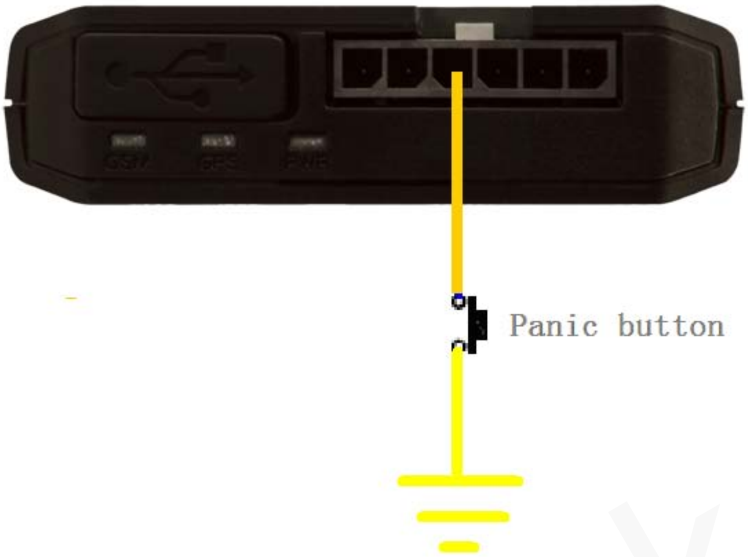



**Figure 8. Typical Digital Input Connection**

## 3.7. Digital Outputs

There are two digital outputs on GV55LITE. All are of open drain type and the maximum drain current is 150mA. Each output has the built-in over current and recovery PTC fuse

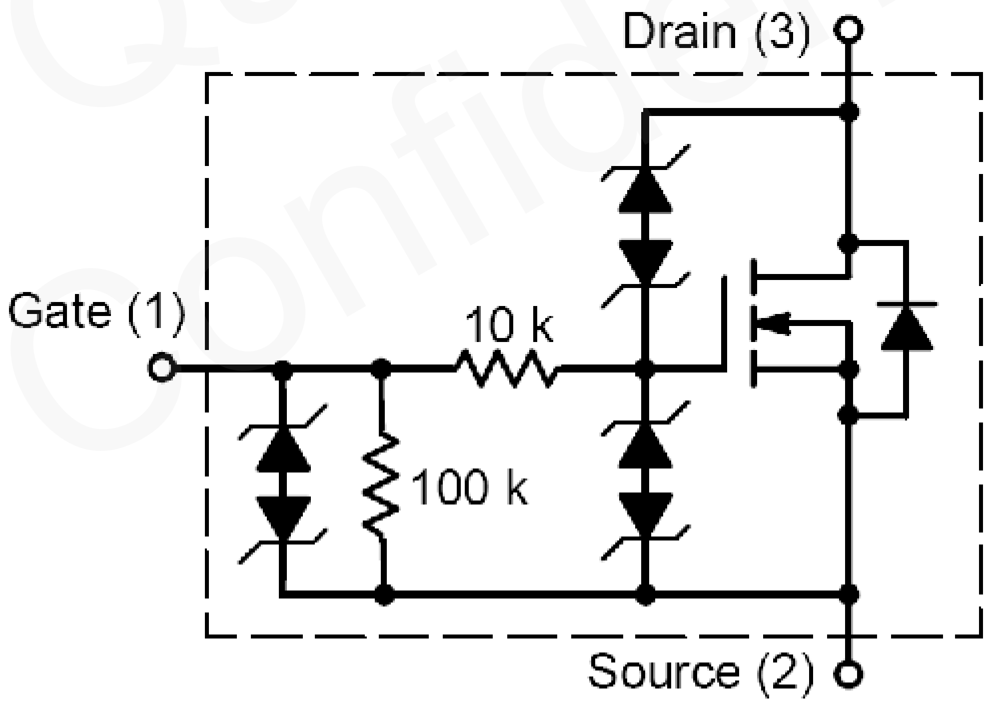



**Figure 9. Digital Output Internal Drive Circuit**

**Table 8. Electrical Characteristics of Ddigital Outputs**

| Logical State | Electrical Characteristics |
|---|---|
| Enable | <1.5V @150mA |
| Disable | Open drain |

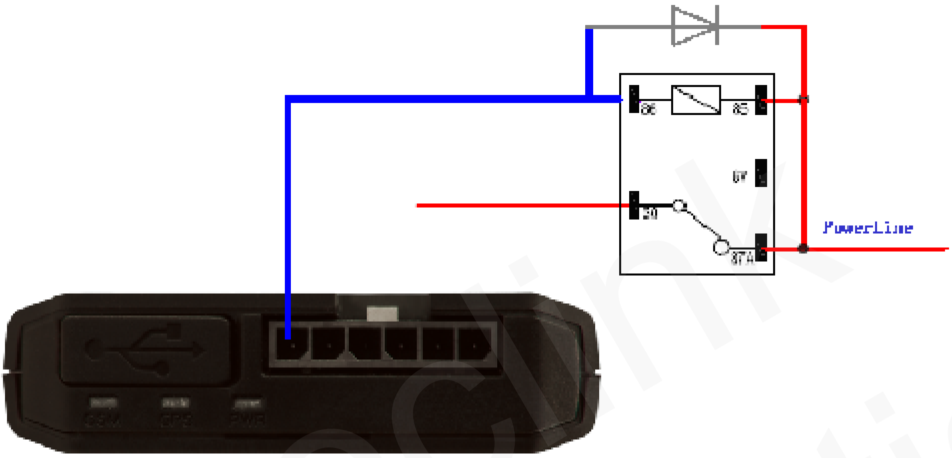



**Figure 10. Typical Connection with Relay**

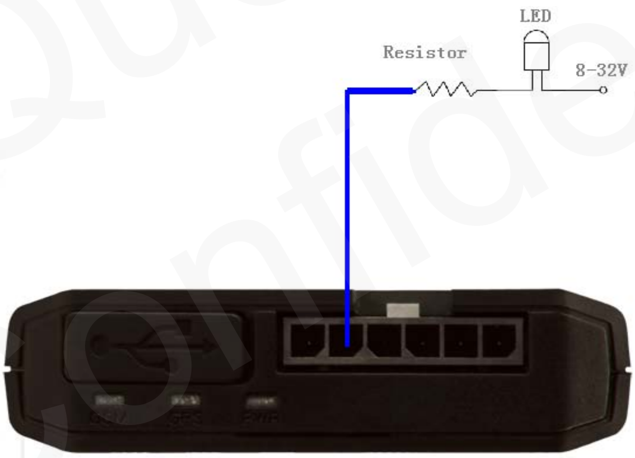



**Figure 11. Typical Connection with LED**

Note:

1 - OUT1 will latch the output state during reset.

2- All outputs are internally without pulled up to PWR pin by a diode. So an external flyback diode is needed when the output is connected to an inductive load.

## 3.8. **Device Status LED**

| | | |
|---|---|---|
| GSM (note1) | Device is searching GSM network | Fast flashing |
| | Device has registered to GSM network. | Slow flashing |
| | SIM card needs pin code to unlock. | ON |
| GPS (note 2) | GPS chip is powered off | OFF |
| | GPS sends no data or data format error | Slow flashing |
| | GPS chip is searching GPS info. | Fast flashing |
| | GPS chip has gotten GPS info. | ON |
| PWR (note 2) | No external power, and each time the device powers on, both LED's will work for 30 minutes and then are turned off deadly when LED ON is 0 | OFF |
| | External power in and LED ON is 1 | ON |

**Table 9. Definition of Device status and LED**

GV55LITE has three status led that GSM GPS PWR led.




**Figure 12. GV55LITE LED on the Case**

Note:
1 - GSM LED cannot be configured.
2 - GPS LED and PWR LED can be configured to turn off after a period of time using the configuration tool
3 - Fast flashing is about 60ms ON/ 780ms OFF
4 - Slow flashing is about 60ms ON/ 1940ms OFF
5 –When LED ON is 0, each time the device powers on, both LED's will work for 30 minutes and then are turned off deadly